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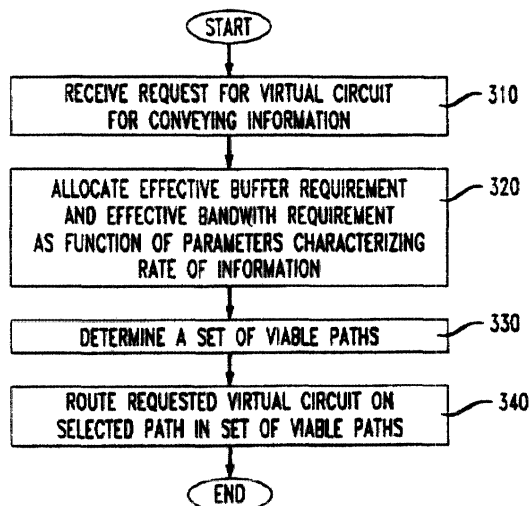
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(54) **A method for admission control and routing by allocating network resources in network nodes**

(57) A method regulates the admission control of, and requests for routing of, virtual circuits in a network by determining network resource requirements for the virtual circuits. In particular, the network resource requirements are based on a set of parameters used to control the flow of information from a communications device onto the virtual circuit. The requirements for network resources typically include buffer space require-

ments in network nodes and bandwidth requirements in network links, and the parameter used to control the flow of information are those associated with an access regulator. The network resource determination is made for the case where lossless performance in the network is required and in the case where statistical multiplexing with limited loss is allowed. Both constant bit rate and variable bit rate information is considered.

**FIG. 3**





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# EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	KALMANEK C R ET AL: "A HIGH-PERFORMANCE QUEUEING ENGINE FOR ATM NETWORKS" PROCEEDINGS OF THE INTERNATIONAL SWITCHING SYMPOSIUM, JP, TOKYO, IEICE, vol. SYMP. 14, 1992, pages 354-358, XP000337673	1-4, 6, 7, 9, 12, 13, 15, 16, 18	H04L12/56 H04Q11/04
Y	* paragraph 4.1 *  * page 354, left-hand column, line 31 - right-hand column, line 10 * ---	8, 10, 11, 17, 19, 20	
X	BOLLA R ET AL: "AN INTEGRATED DYNAMIC RESOURCE ALLOCATION SCHEME FOR ATM NETWORKS" PROCEEDINGS OF THE ANNUAL JOINT CONFERENCE OF THE COMPUTER AND COMMUNICATIONS SOCIETIES (INFOCOM), US, LOS ALAMITOS, IEEE COMP. SOC. PRESS, vol. CONF. 12, 1993, pages 1288-1297, XP000419693 ISBN: 0-8186-3580-0	28, 31	
A	* abstract * * page 1288, right-hand column, line 19 - line 36 * * page 1289, right-hand column, line 10 - line 13 * * page 1291, left-hand column, line 6 - line 8 * * figure 1 *  --- -/--	29, 30	TECHNICAL FIELDS SEARCHED (Int.Cl.6)  H04L H04Q
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>9 July 2001</b>	Examiner <b>Perez Perez, J</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons  & : member of the same patent family, corresponding document	

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#### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

#### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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# EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 5228

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	PROTONOTARIOS E N ET AL: "BROADBAND COMMUNICATION NETWORKS WITH ASYNCHRONOUS TIME DIVISION (ATD) MULTIPLEXING AND SWITCHING. \PART I: RESOURCE SHARING FOR EFFICIENT FLOW CONTROL AND CONGESTION AVOIDANCE" PROCEEDINGS OF THE PAN EUROPEAN CONFERENCE ON ISDN,US,BOSTON, IGI EUROPE, vol. CONF. 1, 1986, pages 95-99, XP000307497 * page 96, right-hand column, line 30 - page 97, left-hand column, line 53 * ---	8,10,17,19	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
Y	GUERIN R ET AL: "A UNIFIED APPROACH TO BANDWIDTH ALLOCATION AND ACCESS CONTROL IN FAST PACKET-SWITCHED NETWORKS" PROCEEDINGS OF THE CONFERENCE ON COMPUTER COMMUNICATIONS (INFOCOM),US,NEW YORK, IEEE, vol. CONF. 11, 1992, pages 1-12, XP000300040 ISBN: 0-7803-0602-3 * paragraph 4.0 * ---	11,20	
A	EP 0 535 860 A (AMERICAN TELEPHONE & TELEGRAPH) 7 April 1993 (1993-04-07) * abstract * --- -/--	21-27	
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		9 July 2001	Perez Perez, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-27

Method for allocating link capacity and buffer space to a request for a virtual circuit.

2. Claims: 28-31

Method for determining a maximum number of requests for a virtual circuit that can be allocated to a certain class for a given probability of loss.



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P, X	<p>ELWALID A ET AL: "A NEW APPROACH FOR ALLOCATING BUFFERS AND BANDWIDTH TO HETEROGENEOUS, REGULATED TRAFFIC IN AN ATM NODE"</p> <p>IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, US, IEEE INC. NEW YORK, vol. 13, no. 6, 1 August 1995 (1995-08-01), pages 1115-1127, XP000518732</p> <p>ISSN: 0733-8716</p> <p>* the whole document *</p> <p>-----</p>	1-27	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		9 July 2001	Perez Perez, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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09-07-2001

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		CA 2072182 A,C	05-04-1993
		DE 69231083 D	29-06-2000
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82